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NOTICE OF ALLOWANCE AND FEE(S) DUE

27367 7590 01/27/2009

WESTMAN CHAMPLIN & KELLY, P.A.
SUITE 1400
900 SECOND AVENUE SOUTH
MINNEAPOLIS, MN 55402

EXAMINER

ELPENORD, CANDAL

ART UNIT

PAPER NUMBER

2416

DATE MAILED: 01/27/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,617

08/09/2006

Gerard Babonneau

F40.12-0035

6073

TITLE OF INVENTION: METHOD AND DEVICE FOR CONTROLLING DATA PACKET TRAFFIC AT THE INPUT OF A NETWORK, AND CORRESPONDING COMPUTER PROGRAM AND NETWORK EQUIPMENT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	04/27/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27367 7590 01/27/2009

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MINNEAPOLIS, MN 55402

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,617 08/09/2006 Gerard Babonneau F40.12-0035 6073

TITLE OF INVENTION: METHOD AND DEVICE FOR CONTROLLING DATA PACKET TRAFFIC AT THE INPUT OF A NETWORK, AND CORRESPONDING COMPUTER PROGRAM AND NETWORK EQUIPMENT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 04/27/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
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ELPENORD, CANDAL 2416 370-230000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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EXAMINER

ELPENORD, CANDAL

ART UNIT

PAPER NUMBER

2416

DATE MAILED: 01/27/2009

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 131 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 131 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/553,617	BABONNEAU ET AL.	
	Examiner	Art Unit	
	CANDAL ELPENORD	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to December 29, 2008.
2. ☒ The allowed claim(s) is/are 19-25, 27-37, renumbering as 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 respectively.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

/Kwang B. Yao/
Supervisory Patent Examiner, Art Unit 2416

Reasons For Allowance

1. The following is an examiner's statement of reasons for allowance:
2. **Claims 19-25, 27-37** are allowed.
3. The present invention is directed toward a method and device for controlling the data packet at the input of a network in which upon arrival the packet is assigned a priority level by employing token bucket mechanism with N operating levels and token buffers. A packet is accepted or rejected based on the availability of tokens in the bucket.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Regarding independent claim 19, method, wherein each of the N operating levels is managed by a regulator $b_i(r_i \sim b_{m_i})$, $i \sim \{1 \text{ to } N\}$, with: r_i a nominal bit rate of the regulator; b_{m_i} a maximum size of the token buffer of the regulator; $b_i(t)$ an instantaneous value of the filling of the token buffer of the regulator, a step of accepting said packet in a buffer forming a means for managing a queue, if the packet has been assigned tokens, a step of rejecting said packet, if it has not been assigned tokens.

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Regarding independent claim 32, a computer readable medium encode with computer executable instructions for the executions of a method, wherein each of the N operating levels is managed by a regulator $b_i(r_i \sim b_{m_i})$, $i \sim \{1 \text{ to } N\}$, with: r_i a nominal bit rate of the regulator; b_{m_i} a maximum size of the token buffer of the regulator; $b_i(t)$ an instantaneous value of the filling of the token buffer of the regulator, a step of accepting said packet in a buffer forming a means for managing a queue, if the packet has been assigned tokens, a step of rejecting said packet, if it has not been assigned tokens.

Regarding independent claim 33, device for controlling data packet traffic at input of a network, wherein each of the N operating levels is managed by a regulator $b_i(r_i \sim b_{m_i})$, $i \sim \{1 \text{ to } N\}$, with: r_i a nominal bit rate of the regulator; b_{m_i} a maximum size of the token buffer of the regulator; $b_i(t)$ an instantaneous value of the filling of the token buffer of the regulator, a step of accepting said packet in a buffer forming a means for managing a queue, if the packet has been assigned tokens, a step of rejecting said packet, if it has not been assigned tokens.

Regarding independent claim 37, device for controlling data packet traffic at input of a network, wherein each of the N operating levels is managed by a regulator $b_i(r_i \sim b_{m_i})$, $i \sim \{1 \text{ to } N\}$, with: r_i a nominal bit rate of the regulator; b_{m_i} a maximum size of the token buffer of the regulator; $b_i(t)$ an instantaneous value of the filling of the token buffer of the regulator, a step of accepting said packet in a buffer forming a means for managing a queue, if the packet has been assigned tokens, a step of rejecting said packet, if it has not been assigned tokens.

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The closest prior art of records, Appala '265 discloses a method of controlling data packet traffic at input of a network (see, "method for assigning received data packets (i.e. data flows, col. 1, lines 63-66) to plurality of queues based on priority", col. 2, lines 39-45, see, the host CPU for controlling the switching logic with respect to forwarding decisions in relation to received data packet at the ingress port, col. 3, lines 63 to col. 4, lines 5, fig. 1 in combination with fig. 2, see integrated multiport switch network), the traffic comprising N streams and/or sub-streams which are each associated with a priority level, $N > 2$ (fig. 1 in combination with fig. 2, see plurality of data packets (i.e. data flows, col. 1, lines 63-66, noted: data flows corresponding to sequence of data packets, col. 62-65) being received at the interface of the integrated switch, col. 3, lines 50-62) each of the packets being marked with the priority level associated with the stream or sub-stream to which said packet belongs (fig. 2, see plurality of priorities associated with data packets (i.e. data flows, col. 1, lines 63-66, col. 4, lines 44-51) wherein the method (see, "method for assigning received data packets (i.e. data flows, col. 1, lines 63-66) to plurality of queues based on priority", col. 2, lines 39-45), comprises: a step of arrival of a packet and obtaining its priority level (see, "method for assigning received data packets (i.e. data flows, col. 1, lines 63-66) to plurality of queues based on priority", col. 2, lines 39-45), a step of assigning tokens to said packet, if tokens are available for said packet (fig. 2, see plurality of token buffers, noted: the token bucket filters passing the data packets to corresponding priorities based on the availability of the number of tokens, col. 3, lines 11-18, col. 4, lines 44-51), implementing a token bucket mechanism with N operating levels with N token buffers

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(fig. 2, see plurality of token buckets (i.e. TBF 1 to TBF n) where the number of tokens corresponds to the number of data packets and plurality of priorities queues 30, col. 31-39, col. 6, lines 7-15), each comprising a number of available tokens (fig. 2, see plurality of token buffers, noted: the token bucket filters passing the data packets to corresponding priorities based on the availability of the number of tokens, col. 3, lines 11-18, col. 4, lines 44-51), the tokens of each of the N token buffers being used to process one of the N priority levels (fig. 2, see plurality of Token Bucket with associated priority queues 30a to 30-30e, col. 4, lines 44-66), wherein the tokens are assigned or not assigned to said packet depending on the tokens available at least in the token buffer used to process the priority level of said packet (noted: the token bucket filters determines whether or not there are sufficient number of tokens available corresponding to the number of packets based on priority col. 2, lines 27-34, col. 5, lines 31-45), a step of each accepting said packet in a buffer (fig. 2, Queuing System 14 for storing received data packets in buffer memory 20, col. 55-59) forming a means for managing a queue (fig. 1, CPU controlling the operations of queue system 14, col. 3, lines 63-67, noted: the token bucket filters in combination with the CPU sets priorities for the serving queues, col. 5, lines 55 to col. 6, lines 6), if the packet has been assigned tokens, a step of rejecting said packet, if it has not been assigned tokens (noted: dropping the received data packet if there are insufficient number of tokens, col. 5, lines 48-54, col. 6, lines 23-32). Appala '265 further discloses computer readable medium with computer executable instructions for implementing the method (fig. 1, see switching logic with programming

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for making forwarding decisions on the incoming data packets, col. 3, lines 63 to col. 4, lines 14).

Yang '334 discloses "wherein the traffic comprises N stream each corresponding to one or more of a multiplex of at least two streams", see paragraph 0020, 0036, lines 1-6.

Erimli '055 further discloses assigning of tokens to a packet in discontinuous mode, col. 6, lines 41-48, col. 1, lines 59-62, col. 7, lines 21-32.

The closest prior arts as discussed above are silent with respect to claimed features: wherein each of the N operating levels is managed by a regulator $b_i(r_i \sim b_{m_i})$, $i \sim \{1 \text{ to } N\}$, with: r_i a nominal bit rate of the regulator; b_{m_i} a maximum size of the token buffer of the regulator; $b_i(t)$ an instantaneous value of the filling of the token buffer of the regulator, a step of accepting said packet in a buffer forming a means for managing a queue, if the packet has been assigned tokens, a step of rejecting said packet, if it has not been assigned tokens.

In view of the above, the closest prior arts in combination fail to anticipate or render the distinct claimed features obvious.

Dependent claims 20-25, 27-31, 34-36 are allowed by virtue of their dependencies on claims 19, 33 respectively

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. De Cnodder et al (US 2002/0087715 A1), Bernstein et al (US 2004/0221032 A1), Milliken et al (US 7,095,753 B1), Archarya et al (US 6,901,050 B1), Oldak et al (US 7,085,236 B2), Wang et al (US 6,748,435 B1), Malaney et al (US 2002/0039349 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CANDAL ELPENORD whose telephone number is (571)270-3123. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Candal Elpenord/

Examiner, Art Unit 2416

/Kwang B. Yao/

Supervisory Patent Examiner, Art Unit 2416